

# ALABAMA DEPARTMENT OF TRANSPORTATION

## General Application Special Provision

DATE: October 28, 2022

GASP No. 22-GA0026

EFFECTIVE DATE: May 1, 2023

SUBJECT: Shotcrete.

Alabama Standard Specifications, 2022 Edition, SECTION 571 shall be amended as follows:

## SECTION 571 SHOTCRETE

### 571.02 Materials.

#### (c) Shotcrete Mix Design.

*Subarticle 571.02(c) shall be replaced by the following:*

#### (c) Shotcrete Mix Design.

The Contractor shall design the shotcrete mix and shall verify the performance of the design of the mix by trial mixes and laboratory tests. The Contractor shall submit the proposed mix design and test results to the Materials and Tests Engineer.

The placement of the shotcrete shall not begin until the mix design is approved through field placement tests and compressive strength testing described in Article 571.03.

Type I, Type II, Type IP, Type IS or Type III cement shall be used. The type and dosage of mineral and chemical admixture, if proposed for use, shall be included in the mix design, verification mixes, and production mix. The design, verification, and production of shotcrete mixes shall result in the shotcrete having the following properties:

| PHYSICAL PROPERTIES OF SHOTCRETE    |   |  |  |  |
|-------------------------------------|---|--|--|--|
| TYPE OF SHOTCRETE PLACEMENT PROCESS | MINIMUM CEMENTITIOUS MATERIAL CONTENT (POUNDS PER CUBIC YARD) | MAXIMUM WATER-CEMENTITIOUS MATERIAL RATIO (W/C) <sup>(1)</sup> | AIR CONTENT RANGE, EA <sup>(2)</sup> (%) | MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS <sup>(3)</sup> (psi) |
| Wet                                 | 550   | 0.55   | NA                                       | 4000   |
| Dry                                 | 550   | 0.50   | NA                                       | 4000   |
| Wet (w/TAC <sup>(2)</sup> )         | 550   | 0.45   | 2.5 to 6.0                               | 4000   |

Notes: (1) W/C = Water-Cementitious Ratio (by weight).

(2) TAC = Total Air Content

(3) As per AASHTO T 23